

# Boys with urogenital birth defects are 33 percent more common in villages sprayed with DDT

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Women who lived in villages sprayed with DDT to reduce malaria gave birth to 33 per cent more baby boys with urogenital birth defects (UGBD) between 2004 and 2006 than women in unsprayed villages, according to research published online by the UK-based urology journal *BJUI*.

And women who stayed at home in sprayed villages, rather than being a student or working, had 41 per cent more baby boys with UGBDs, such as missing testicles or problems with their urethra or penis.

The authors suggest that this is because they spent more time in homes where domestic DDT-based sprays are still commonly used to kill the mosquitos that cause malaria, even in areas where organised mass spraying no longer takes place.

Researchers led by the University of Pretoria in [South Africa](#) studied 3,310 boys born to women from the Limpopo Province, where [DDT](#) spraying was carried out in high-risk areas between 1995 and 2003 to control malaria. The study compared boys born to women in the 109 villages that were sprayed, with those born to women from the 97 villages that were not.

This showed that 357 of the boys included in the study - just under 11 per cent - had UGBDs. The incidence of UGBDs was significantly

higher if the mother came from a sprayed village.

"If women are exposed to DDT, either through their [diet](#) or through the environment they live in, this can cause the chemical to build up in their body" explains lead author Professor Riana Bornman from the University's Department of Urology.

"DDT can cross the [placenta](#) and be present in breast milk and studies have shown that the residual concentration in the baby's umbilical cord are very similar to those in maternal [blood](#).

"It has been estimated that if DDT exposure were to cease completely, it would still take ten to 20 years for an individual who had been exposed to the chemical to be clear of it. Our study was carried out on boys born between 2004 and 2006, five to nine years after official records showed that their mothers had been exposed to spraying.

"Records were not kept before 1995 in the Limpopo Province, but it is reasonable to assume that DDT was being used before that date to combat malaria.

"Although most countries have now banned the use of DDT, certain endemic malarial areas still use indoor residual spraying with DDT to decrease the incidence and spread of the disease, which is caused by [mosquitoes](#)."

The two-year study included 2,396 boys whose mothers had been exposed to DDT and 914 whose mothers had not.

A number of other factors were taken into account to rule out possible causes of the birth defects. These included smoking and drinking, the mother's age, how long she had lived in her village and her race. These all proved statistically insignificant.

The authors believe that their study highlights the importance of educating people in high-risk malaria areas about the dangers of DDT.

"The use of DDT has contributed to the success in reducing malarial transmission and malarial deaths in South and Southern Africa" says Professor Bornman.

"However, the present findings also strongly suggest that indoor residual spraying with DDT is associated with UGBDs in newborn boys.

"With global concerns about the effect of chemicals on health, and the possibility of malaria resurgence and spread as a result of climate change, all authorities should ensure that the general public, including those living under indoor residual spraying conditions, are aware of the possible health risks.

"Educating people living in the DDT-sprayed communities about ways of protecting themselves from undue DDT exposure needs to be carried out as a matter of extreme urgency.

"There must be long-term monitoring of possible environmental and human health impacts, particularly in those areas where DDT will be introduced as part of the fight against [malaria](#).

"We are now carrying out further research to find out how indoor spraying using DDT-based products affects humans and how this risk can be reduced."

More information: DDT and urogenital malformations in newborn boys in a malarial area. Bornman et al. *BJUI*. Online publication 23 October 2009. [doi: 10.1111/j.1464-410X.2009.09003.x](https://doi.org/10.1111/j.1464-410X.2009.09003.x)

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